



GYE + ASSOCIATES

Consultants in Urban Forestry and Arboriculture

Arborist Report

**3080, 3082 & 3090 Washington Avenue
Victoria, BC**

Date of Original Report: February 18, 2019

Date of Previous Revision: November 15, 2020

Date of Current Revision: January 18, 2021

Dates of Field Work: March 2018, October & November 2019

Prepared by Jeremy Gye, Senior Consultant
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EXECUTIVE SUMMARY

Rezoning of three existing single-family residential lots and a development permit are sought for the construction of a 34-unit townhouse development. The on-site tree resource consists of 119 trees, six of which are designated as *protected* by the previous tree bylaw, under which this application is grandfathered. The bulk of the smaller trees on the site are comprised of fruit and flowering trees (largely volunteer plum trees infected with *Black knot canker* and English hawthorn, infected with leaf blight). Several larger trees are located along the front of the site, including London plane, Douglas-fir, Red cedar and Big-leaf maple.

While the proposed concept plan is extensive, the project team has worked diligently with Victoria Parks to retain 12 trees, 10 of which are in a contiguous stand at the north-east corner of the site. A generous tree planting program is included in the landscape plan with many large canopy tree species.

14 off-site and 3 boundary trees have root systems that encroach into the site; the 14 off-site trees will be retained and protected; the three boundary-trees are proposed for removal to make way for the greenway along the north boundary of the site. No boulevard trees front the three lots that comprise the proposed site.

SUMMARY TREE STATISTICS	
CATEGORY	# OF TREES
Total number of trees Inventoried	136 +/-
On site trees	119
(Bylaw protected trees under former tree bylaw)	(6)
(non-bylaw-protected trees)	(113)
Off site or boundary trees	17
Boulevard (municipal) trees	0
Total number of trees to be retained	26
On site bylaw-protected trees to be retained	1
On site non-bylaw-protected trees to be retained	11
Off site & boundary trees to be retained	14
Total number of trees to be removed	110
On site bylaw-protected trees to be removed	5
On site non-bylaw-protected trees to be removed	102
Boundary trees to be removed	3
Total number of replacement trees required	10

Table-1 Summary Tree Statistics

BACKGROUND

The subject site currently consists of three large residential lots. Rezoning to consolidate the lots and a 34-unit townhouse development is proposed. The site slopes gently down from the south-west to the north-east and is populated with a range of different tree species, both native and introduced.



Figure-1 Context photo indicating location of subject properties

ASSIGNMENT

Prepare a Tree Preservation Plan (TPP) and written summary per the City's published Terms of Reference. The TPP shall address all phases of the development requiring tree protection, including site preparation, on-site servicing, construction, landscaping and post-construction care.

METHODOLOGY

Gye and Associates visually assessed the site and associated trees in March of 2018. Further survey work was completed in October and November 2019. All on-site trees and off-site trees with root systems extending into the site have been measured, assessed and surveyed. Trees with multiple stems were measured by taking the largest stem diameter and adding to it 60% of the sum of the residual stems.

Site conditions associated with these trees were also assessed, including ambient grades, signs of recent disturbance and proximity to buildings, driveways, retaining walls or other existing site elements.



The species, age, health and condition of the trees, along with their associated site conditions, are considered in estimating Protected Root Zones (PRZs). These factors inform the selection of an appropriate multiplier of 12x, 15x or 18x, which is then applied to the stem diameter (DBH) to determine the radial offsets for the PRZs.

Legal survey, architectural, civil and landscape site plan drawings were used as a base to develop the tree plan and analyze potential conflicts between the trees and the proposed development, including site grading, underground services and utilities.

We met with the developers on-site to discuss several trees around the perimeter of the site which presented challenges for retention.

OBSERVATIONS

Trees:

The on-site tree resource consists of 119 trees, six of which are designated as *protected* by the previous tree bylaw, under which this application is grandfathered. The bulk of the smaller trees on the site are comprised of fruit and flowering trees (largely volunteer plum trees infected with *Black knot canker* and English hawthorn, infected with leaf blight). Several larger trees are located along the front of the site, including London plane, Douglas-fir, Red cedar and Big-leaf maple. 17 off-site and boundary trees have root systems that encroach into the site.

Broad-leafed and coniferous species within the sub-set of larger growing trees are evenly represented.

- Broadleafed species include Big-leaf maple, London plane, ornamental plum and Horse chestnut.
- Coniferous species include Douglas-fir, Western Red cedar and Scot pine.

Most of the more significant on-site trees are located along the Washington Avenue frontage or at the north-east corner of the site. These include the following:

- two large, multi-stemmed London Planes with crowns that extend well into the development envelope (Tree numbers 531 and 532)—see Figure 2 below;
- Two large ornamental plums (538 and 539);
- Several Western Red cedars (544, 545, 561 and 570);
- Several Douglas-firs (537, 541, 543, 546, 567 and 568);
- Two Big-leaf maples and a Horse chestnut (562, 542 and 540 respectively);
- There are many smaller trees in the interior of the site, including fruiting cherry, many ornamental plums, English hawthorn and laburnum volunteers and a small Weeping willow.



Figure-2 Multiple-stemmed London planes (#s 531 & 532)
located on Washington Avenue frontage.

There are two groups of larger off-site trees with root systems that grow into the development site:

- four Big-leaf maples located on the property adjoining the north boundary of the site (563 – 566); and
- a group of seven Douglas-firs located on two properties adjoining the west boundary of the site at the north end (Off-site Trees 01 – 07).



Figure-3 East-looking perspective of seven off-site trees 01 – 07
beyond north-west corner of site



Site plan review:

While the proposed concept plan is extensive, the project team has worked diligently with Victoria Parks to retain 14 trees, 12 of which are located in a contiguous stand at the north-east corner of the site. A generous tree planting program is included in the landscape plan with many large canopy tree species.

Efforts have been made in the site planning and design process to ensure that the mature off-site trees on the adjoining properties noted above are not affected. Three small volunteers (two English hawthorn and one plum) growing on the north property boundary will need to be removed to make way for the greenway fencing.

SUMMARY TREE STATISTICS	
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Total number of replacement trees required	10

Table-1 Summary Tree Statistics

DISCUSSION

Given the scope of the sub-grading required for this development, we recommend a strategy that combines preservation of viable trees where possible--including a significant stand of higher-value trees at the north-east corner of the site--with a strong replanting of trees appropriate to the new land-use and site conditions. (See the landscape planting plan prepared by Murdoch de Greef Inc.) This strategy will provide better long-term outcomes appropriate for the new land-use context.



Many of the larger landscape trees proposed for the development are located along the southern and western flanks of the site. Without protection, it is probable that the growing soils along these edges will be disturbed and compacted during the construction phase of the project. For this reason, we recommend that fencing be erected to protect these soils during construction, as indicated on the attached tree plan drawing. This can be achieved by simply moving the site hoarding in toward the interior of the site by 2m.

To preserve the condition of the four off-site maples at the north-east corner of the site, it will be necessary to carefully manage the sub-grading for the portion of the Cecilia Greenway and side yards of the proposed townhomes to the south of these trees and within their protected root zones. The proposed grading for the Greenway appears favourable. The current surfacing of the Greenway is indicated as asphalt on the Landscape Materials plan; porous storm water pavers are recommended instead in order to infiltrate rainfall into the roughly 130m² area of root zone covered. Similar care and approach will be needed at the west end of the greenway where it transits over the protected root zones of the off-site firs indicated on the tree plan (attached).

TREE MANAGEMENT MEASURES

Tree protection measures to limit impacts from the construction of the building foundation, driveway, utility lines upgrading and installation include the following:

1. **Start-up meeting:** Before demolition, site servicing, landscaping or other site work commences, the Site Superintendent shall meet with the arborist to review the Tree Protection Plan and associated measures. The Site Superintendent shall ensure that all relevant sub-contractors and trades are familiarized with the tree protection measures and permit conditions that apply to the project.
2. **Tree Plan Posting:** A 24x36" all-weather copy of the tree plan shall be posted in plain site in the site office.
3. **Tree removal, grubbing & mulching:** During the demolition and grubbing phase, all tree protection areas (TPAs) will be clearly flagged. In addition, the project arborist shall be on site to monitor and supervise site works occurring adjacent to flagged TPAs.
4. **Tree protection fencing:** Protective tree barrier fencing shall be erected as indicated on the attached tree plan once tree removal and grubbing is completed and prior to other site work commencing. Tree fencing and signage shall be inspected by the project arborist, approved by the City of Victoria and remain in good condition throughout the duration of the project.
5. **Prohibition of disturbance:** All forms of disturbance to the protected trees or their habitat within the fenced protection areas (TPAs) is prohibited.
6. **Temporary access to TPAs:** Temporary construction access to a Tree Protection Area (TPA) must be approved and supervised by the project arborist. This includes landscaping.
7. **Soil armouring:** If it should prove necessary to reduce the tree fencing, the exposed TPA outside the fencing shall be armoured with 3/4" plywood or a temporary cover of geo-textile and 200mm of road-base, moderately compacted with a plate compactor.
8. **Prohibition of material storage within TPAs:** No equipment, materials, waste products or excavated soil shall be placed or stored within the TPA. THIS PARTICULARLY INCLUDES HOARDING OF EXCAVATED SOILS NEEDED FOR BACKFILLING OF THE FOUNDATION.



9. Arborist supervision of site works: The arborist shall be present to oversee stump removal, excavation, sub-grading, lane or pathway base preparation, service trenching, blasting *or any other form of disturbance* within, or adjacent to, the tree protection areas (TPAs). Any tree roots or branches damaged shall be pruned back to undamaged tissue by the arborist.

10. Covering excavated cuts: Any excavated cut within or adjacent to a TPA shall be securely covered with heavy-gauge plastic to prevent soil dessication and erosion.

11. Site monitoring: The Project Arborist shall monitor the site during the site preparation, construction and landscaping phases to ensure ongoing and effective compliance with the tree protection measures specified in this tree plan and in on-site meetings with the General Contractor and relevant consultants and sub-contractors.

12. Pre-blasting meeting: The contractor and blasting sub-contractor shall meet with the arborist to review the blasting plan prior to drilling. Modified blasting practices or rock removal techniques shall be utilized where considered necessary by the arborist to minimize blasting impacts to protected trees.

13. Procedure for blasting near tree root zones:

a) When blasting is required immediately adjacent to a Tree Protection Area, the blasting contractor shall work with the arborist to develop a blasting plan and deploy best practices that minimize impacts to protected trees.

b) Blasting vibrations in the vicinity of the Tree Protection Areas are not to exceed a peak particle velocity of 25 mm/sec.

c) Use DYNAMITE as the explosive product. No fertilizer-based explosive is permitted, due to its toxicity to tree roots.

d) The contractor shall prevent rock debris from the blast site from entering the TPA.

14. Irrigation of TPAs: Mulched TPAs shall be irrigated once every two weeks during the dry summer period (May 1 - Sept 31) to a minimum effective depth of 30cm. The General Contractor shall ensure that a temporary water service for irrigation purposes is emplaced on site.

15. Pre-landscaping meeting: The General Contractor, Landscape Contractor and Landscape Architect shall meet with the arborist to review the landscaping workplan prior to landscape construction or site preparation commencing. Potential impacts to sensitive tree habitat will be identified and measures provided to eliminate or mitigate the impacts.

16. Replacement tree requirements: Replacement trees shall be planted on the subject property and adjacent road allowance as shown on the Landscape plan. (See the Landscape Plan for proposed species and planting locations.) Planting area around the site perimeter shall be fenced to protect growing soils, as indicated on the tree plan.

17. Post-construction inspection and sign-off: A post-construction inspection and assessment of the site and protected trees shall be conducted by the Project Arborist in the company of the General Contractor. Any deficiencies will be identified. Once all deficiencies have been addressed to the satisfaction of the Project Arborist and the City of Victoria, a post-construction letter of completion will be prepared by the arborist and submitted to the City. Additional detail is provided on the attached tree plan.



If diligently implemented, the tree protection measures specified in the Tree Management Plan and this report will effectively preserve the on-site habitat of all off-site trees and replacement trees proposed for planting around the periphery of the site.

ROLE OF THE PROJECT ARBORIST

In addition to assisting with tree preservation planning during the rezoning and permit application phases of the project, the arborist shall be present during the construction and landscape phases of the project to supervise work within or immediately adjacent to the tree protection areas and to monitor the site for ongoing compliance with the protection measures and conditions required by the tree permit.

The following is a summary of the key interventions required by the arborist (G&A). **The owner's building contractor is responsible for coordinating with the arborist for the required on-site work.**

- A mandatory site meeting is required with the owner and General Contractor to review the tree preservation plan prior to work commencing on site. The purpose of the meeting is to systematically review the objectives of the plan and the specific measures required to protect the relevant trees during the site preparation, construction and landscape phases of the redevelopment. The meeting provides an opportunity to address any building constraints or conflicts and answer questions.
- The arborist shall inspect the prescribed tree protection fencing and any soil-armoring prior to work commencing on site.
- The use of explosive for rock removal can kill or injure trees if not managed carefully. If rock removal is required as part of the site preparation phase, the building and blasting contractor shall meet on site with the arborist to develop the rock removal work plan together, prior to an estimate of costs being provided by the blasting contractor.
- The arborist shall be present to oversee the following site work within or immediately adjacent to the Tree Protection Areas identified on the attached plan:
 - demolition and renovation of existing buildings or other site elements,
 - sub-grading
 - excavation for new building foundation and perimeter drains;
 - rock removal or blasting;
 - trenching for both municipal service connections and extension of these underground services to the building sites;
 - periodic site inspections to ensure effective compliance with required tree preservation measures;
 - meetings as required to resolve any emergent conflicts between building or landscape construction requirements and tree protection.
- Landscaping activities--such as trenching for irrigation or lighting, grubbing of vegetation, distribution of soils and other landscape materials—are another potential source of damage to the sensitive soils and root systems of protected trees.



- The arborist shall coordinate with the landscape consultant to ensure that relevant aspects of the tree protection plan are considered in the development of the landscape plan.
- The arborist shall review a draft of the proposed landscape plan prior to the plan being finalized.
- The landscape consultant and landscape contractor shall meet on site with the project arborist to review all aspects of the landscaping work plan within the TPAs.
- The arborist shall supervise landscape activity within the tree protection areas as necessary.
- At the completion of the redevelopment, the arborist shall ensure that any tree protection or restoration deficiencies are addressed by the owner and building contractor. Once all deficiencies have been repaired, the arborist shall prepare a letter to the City of Victoria confirming successful completion of the project, including resolution of any deficiencies.

CERTIFICATION

This report and the opinions expressed within it have been prepared in good faith and to accepted arboricultural standards within the scope afforded by its terms of reference and the resources made available to the consultant.

APPENDICES

- Tree Inventory Tables
- Tree Management Plan drawing

Respectfully submitted,

Jeremy Gye – Senior Consultant

Gye and Associates, Urban Forestry Consultants Ltd.

Consulting Arborist (Diploma, American Society of Consulting Arborists, 1997)

ISA Certified Arborist (Certification No. PN-0144A)

ISA Municipal Specialist (Certification No. PN-0144AM)

ISA Tree Risk Assessment Qualified

Certified Master Woodland Manager (Small Woodlands Program of BC)



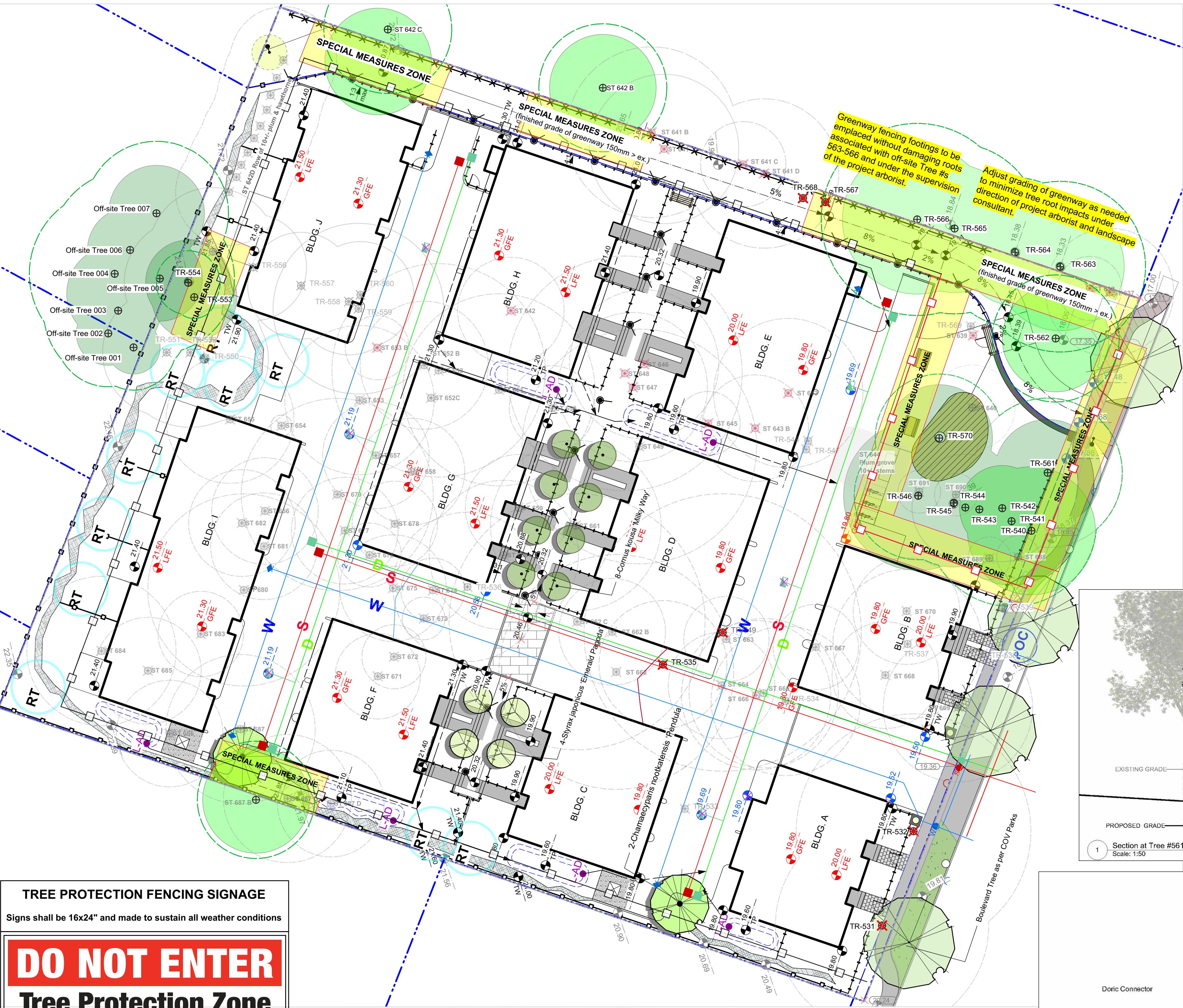
APPENDIX 1 – TREE INVENTORY TABLE

G&A Tree ID	Common Name	DBH (cm)	PRZr (m)	Crown Radius (m)	Health	Structural Condition	Bylaw Protected Tree?	Amenity & Ecological Value	Comments	Action
Tree 01	Douglas fir	25	4	2	Fair	Good	No		Off-site tree (no tag)	RETAIN
Tree 02	Douglas fir	35	5	3	Good	Good	No		Off-site tree (no tag)	RETAIN
Tree 03	Douglas fir	45	7	4	Good	Fair	No		Off-site tree (no tag)	RETAIN
Tree 04	Douglas fir	50	8	4.5	Good	Good	No		Off-site tree (no tag)	RETAIN
Tree 05	Douglas fir	45	7	4	Good	Good	No		Off-site tree (no tag)	RETAIN
Tree 06	Douglas fir	50	8	4.5	Good	Good	No		Off-site tree (no tag)	RETAIN
Tree 07	Douglas fir	45	7	4	Good	Good	No		Off-site tree (no tag)	RETAIN
531	Plane tree	100+	10	8	Good	Fair	Yes	Moderate-to-high		Remove
532	Plane tree	120+	11	9	Good	Fair	Yes	Moderate-to-high		Remove
533	Douglas fir	30	5	4	Fair	Fair	No	Moderate-to-high		Remove
534	Bigleaf maple	40	7	6	Fair	Fair	No	Moderate-to-high	Tree leaning East	Remove
535	Bigleaf maple	28;26;12	6	4	Fair	Fair	No	Moderate-to-high		Remove
536	Douglas fir	38	7	4	Fair	Fair	No	Moderate-to-high		Remove
537	Douglas fir	40	7	5	Fair	Good	No	Moderate-to-high		Remove
538	Ornamental plum	70	13	5	Fair	Fair	No	Moderate-to-high		Remove
539	Ornamental plum	60	11	5	Fair	Fair	No	Moderate-to-high		Remove
540	Chestnut	40;30	8	6	Fair	Fair	No	Moderate-to-high		RETAIN
541	Douglas fir	60	11	6	Fair	Fair	Yes	Moderate-to-high		RETAIN
542	Bigleaf maple	30	5	4	Good	Fair	No	Moderate-to-high	Tree leaning North	RETAIN
543	Douglas fir	48	9	4	Fair	Fair	No	Moderate-to-high		RETAIN
544	Red cedar	30	5	4	Good	Good	No	Moderate-to-high		RETAIN
545	Red cedar	58	10	6	Good	Good	No	Moderate-to-high		RETAIN
546	Douglas fir	50	9	7	Fair	Good	No	Moderate-to-high		RETAIN
547	Chestnut	32	6	5	Good	Good	No	Moderate-to-high		Remove
548	Douglas fir	46	8	6	Fair	Fair	No	Moderate-to-high	Tree leaning North	Remove
549	Douglas fir	72	13	6	Fair	Good	Yes	Moderate-to-high		Remove
550	Douglas fir	34	6	5	Fair	Fair	No	Moderate-to-high		Remove
551	Douglas fir	34	6	4	Fair	Fair	No	Moderate-to-high		Remove
552	Bigleaf maple	38	7	4	Poor	Poor	No	Moderate-to-high		Remove
553	Scots pine	24	4	4	Fair	Fair	No	Moderate-to-high		RETAIN
554	Scots pine	32	6	4	Fair	Fair	No	Moderate-to-high	Tree leaning North-west	RETAIN
555	Douglas fir	36	6	3	Poor	Poor	No	Moderate-to-high		Remove
556	Douglas fir	30	5	3	Poor	Poor	No	Moderate-to-high		Remove
557	Douglas fir	30	5	3	Fair	Fair	No	Moderate-to-high		Remove
558	Douglas fir	30	5	2	Poor	Poor	No	Moderate-to-high		Remove
559	Douglas fir	42	8	4	Fair	Fair	No	Moderate-to-high		Remove
560	Douglas fir	30	5	3	Fair	Fair	No	Moderate-to-high		Remove
561	Red cedar	30;30;16	7	5	Good	Fair	No	Moderate-to-high		RETAIN
562	Bigleaf maple	38	7	5	Good	Fair	No	Moderate-to-high		RETAIN
563	Bigleaf maple	58	10	6	Fair	Fair	No		Off-site tree	RETAIN
564	Bigleaf maple	32	6	5	Good	Good	No		Off-site tree	RETAIN
565	Bigleaf maple	28;26	7	6	Good	Good	No		Off-site tree	RETAIN
566	Bigleaf maple	62	11	7	Good	Fair	Yes		Off-site tree	RETAIN
567	Douglas fir	34	6	5	Fair	Fair	No	Moderate-to-high		Remove
568	Douglas fir	30	5	4	Fair	Fair	No	Moderate-to-high		Remove
569	Golden cedar	38	7	5	Fair	Fair	No	Moderate-to-high		Remove
570	Red cedar	46	8	5	Fair	Fair	No	Moderate-to-high		RETAIN
637	Big-leaf maple	5, 10, 15, 15	6	5	Fair	Fair	No	Moderate-to-high		Remove
638	Golden cedar	15	3	3	Good	Good	No	Moderate-to-high		Remove
639	Laburnum	15,15	4	3	Good	Good	No	Poor		Remove
640	Laburnum	10, 10, 10	4	3	Good	Good	No	Poor		Remove
641a	Fruiting plum	40	7	5	Poor	Poor	No	Poor		Remove
641b	Fruiting plum	20, 30	6	5S	Poor	Poor	No	Poor	Boundary tree (no tag)	Remove
641c	English hawthorn	20	4	4	Fair	Fair	No	Poor	Boundary tree (no tag)	Remove
641d	English hawthorn	20, 25	7	5	Fair	Fair	No	Poor	Boundary tree (no tag)	Remove
642a	Pear	25	5	5N	Fair	Poor	No	Poor		Remove
642b	Crab apple	40	6	5	Fair	Poor-Fair	No		Off-site tree (no tag)	RETAIN
642c	English hawthorn	35	6	5S	Poor-Fair	Fair	No		Off-site tree (no tag)	RETAIN



APPENDIX 1 – TREE INVENTORY TABLE cont.

G&A Tree ID	Common Name	DBH (cm)	PRZr (m)	Crown Radius (m)	Health	Structural Condition	Bylaw Protected Tree?	Amenity & Ecological Value	Comments	Action
642d	Row of 10+/- plum &	30-40 range	various	6	Fair-Good	Fair	No	Poor	(No tag)	Remove
643a	Apple	40	7	7NW	Fair	Poor	No	Poor		Remove
643b	Big-leaf maple	30, 28, 25	11	5	Fair	Fair	Yes	Moderate-to-high	(No tag)	Remove
644	Grove of 10+/- fruiting	10x20	various	6	Fair	Poor-Fair	No	Poor		Remove
645	Laburnum	5, 10, 10	3	3	Good	Good	No	Poor		Remove
646	Laburnum	15, 20, 20	7	3	Fair	Fair	No	Poor		Remove
647	Douglas-fir	40	7	3N	Poor	Poor	No	Moderate-to-high		Remove
648	English hawthorn	25, 25, 30	11	5N	Poor	Poor	No	Poor		Remove
649	Weeping willow	10, 15, 15, 20, 25	11	5	Good	Fair	No	Moderate-to-high		Remove
650	Apple	20	4	2	Poor	Fair	No	Poor		Remove
651	Pear	10, 15, 20, 25	9	4	Poor	Poor	No	Poor		Remove
652a	Pear	20, 20, 30	10	4	Fair	Poor-Fair	No	Poor		Remove
652b	Apple	35	6	4	Fair	Fair	No	Poor	(No tag)	Remove
652c	Fruiting plum	10, 10	3	4	Good	Good	No	Poor	(No tag)	Remove
653a	Apple	40	7	2	Poor	Poor	No	Poor		Remove
653b	Fruiting plum	10, 10	3	2	Good	Fair	No	Poor	(No tag)	Remove
654	Apple	5	1	2	Fair	Poor	No	Poor		Remove
655	Apple	35	6	6SE	Fair	Poor	No	Poor		Remove
656	Fruiting plum	30	5	6W	Poor-Fair	Poor	No	Poor		Remove
657	Fruiting plum	25	5	5N	Fair	Fair	No	Poor		Remove
658	Fruiting plum	25	5	5E	Fair	Poor	No	Poor		Remove
659	Apple	30	5	3	Poor	Poor	No	Poor		Remove
660	Apple	40	7	3	Poor	Poor	No	Poor		Remove
661	Pear	45	8	2	Poor-Fair	Poor	No	Poor		Remove
662a	Laburnum	12X5	11	3	Fair	Poor	No	Poor		Remove
662b	Big-leaf maple	30	5	4N	Fair	Poor	No	Poor	(No tag)	Remove
662c	Big-leaf maple	25, 25, 20, 20	12	4	Poor	Poor	Yes	Moderate-to-high	(No tag)	Remove
663	Laburnum	10, 15	4	3E	Good	Fair	No	Poor		Remove
664	Laburnum	30	5	3S	Fair	Fair	No	Poor		Remove
665	English hawthorn	15, 30	7	3	Fair	Fair	No	Poor		Remove
666	Laburnum	30, 15	7	5SE	Poor-Fair	Poor	No	Poor		Remove
667	Laburnum	20	4	6E	Good	Poor-Fair	No	Poor		Remove
668	Fruiting cherry	25	5	4S	Poor	Poor-Fair	No	Poor		Remove
669	English hawthorn	10X10	7	5	Poor-Fair	Poor-Fair	No	Poor		Remove
670	Camelia (tree form)	6X8	5	3	Good	Good	No	Moderate-to-high		Remove
671	Fruiting plum	20	4	2	Good	Fair	No	Poor		Remove
672	Fruiting plum	15	3	2	Fair	Fair	No	Poor		Remove
673	Fruiting plum	10	2	2S	Fair	Fair	No	Poor		Remove
674	Fruiting plum	15	3	2	Good	Good	No	Poor		Remove
675	Fruiting plum	30	5	4S	Fair	Fair	No	Poor		Remove
676	English hawthorn	5, 10, 10	3	5S	Poor	Poor	No	Poor		Remove
677	Fruiting plum	20, 10	5	5E	Poor	Poor	No	Poor		Remove
678	Fruiting plum	20	4	5S	Fair	Fair	No	Poor		Remove
679	Fruiting plum	15, 20, 30	9	5	Fair	Poor	No	Poor		Remove
680	Apple	30, 30	9	4	Fair	Fair	No	Poor		Remove
681a	Fruiting plum	25	5	6S	Fair	Poor	No	Poor		Remove
681b	Fruiting plum	15	3	6S	Fair	Poor	No	Poor	(No tag)	Remove
682	Fruiting plum	30	5	6S	Fair	Poor	No	Poor		Remove
683	Fruiting plum	15, 15	4	5W	Fair	Poor	No	Poor		Remove
684	Apple	25, 25	7	4N	Fair	Poor	No	Poor		Remove
685	Pear	25	5	3	Fair	Fair	No	Poor		Remove
686	Apple	25	5	3	Poor	Poor	No	Poor		Remove
687a	Fruiting plum	40	7	6N	Fair	Poor	No	Poor		Remove
687b	Fruiting plum	35	6	5W	Fair	Poor	No		Off-site tree (no tag)	RETAIN
687c	Fruiting plum	35	6	4	Fair	Fair	No	Poor	(No tag)	Remove
687d	Fruiting plum	25	5	3	Fair	Fair	No	Poor	(No tag)	Remove
688	English hawthorn	5, 10, 10, 15	15	3	Poor	Poor	No	Poor		Remove
689	Fruiting plum	30	5	7S	Fair	Poor	No	Poor		Remove
690	Big-leaf maple	20	4	3N	Fair	Fair	No	Moderate-to-high		Remove
691	English hawthorn	20	4	3	Poor	Poor	No	Poor		Remove



TREE PROTECTION FENCING SIGNAGE

Signs shall be 16x24" and made to sustain all weather conditions

DO NOT ENTER

Tree Protection Zone

NO DUMPING
NO FILL

NO STORAGE

NO DIGGING
NO EXCAVATING

Project Arborist: Gye and Associates Ltd. 250.883.4533

Tree Protection Fencing Detail

Modular steel panel fencing is recommended in order to reduce land-fill waste post-construction. Fencing panels shall be secured to the ground with rebar wired to panel frame.

All-weather signage will be attached, clearly designating the area within as a TREE PROTECTION AREA – NO TRESPASSING.

In cases where steel-panel fencing is not practical or available, fencing shall be constructed with a wooden 2x4 frame (side, top and bottom rails) and back-bracing supports as required to ensure robust placement. Snow-fencing will then be affixed to the frame using battens, zip-ties, staples, wire or nails.

SUMMARY TREE STATISTICS	
CATEGORY	# OF TREES
Total number of trees Inventoried	136 +/-
On site trees	119
(Bylaw protected trees under former tree bylaw)	(6)
(non-bylaw-protected trees)	(113)
Off site or boundary trees	17
Boulevard (municipal) trees	0
Total number of trees to be retained	26
On site bylaw-protected trees to be retained	1
On site non-bylaw-protected trees to be retained	11
Off site & boundary trees to be retained	14
Total number of trees to be removed	110
On site bylaw-protected trees to be removed	5
On site non-bylaw-protected trees to be removed	102
Boundary trees to be removed	3
Total number of replacement trees required	10

LEGEND

CONIFER

TREE CANOPY

TREE CENTRE

Trees to be retained

DECIDUOUS

TREE TAG #

PROTECTED ROOT ZONE

REMOVE TREE SYMBOL

Trees to be removed

TREE TABLE									
G&A Tree ID	Common Name	DBH (cm)	PRZr (m)	Crown Radius (m)	Health	Structural Condition	On-site Bylaw Protected Tree?	Comments	Action
Tree 01	Douglas fir	25	4	2	Fair	Good	n/a	Off-site tree (no tag)	RETAIN
Tree 02	Douglas fir	35	5	3	Good	Good	n/a	Off-site tree (no tag)	RETAIN
Tree 03	Douglas fir	45	7	4	Good	Fair	n/a	Off-site tree (no tag)	RETAIN
Tree 04	Douglas fir	50	8	4.5	Good	Good	n/a	Off-site tree (no tag)	RETAIN
Tree 05	Douglas fir	45	7	4	Good	Good	n/a	Off-site tree (no tag)	RETAIN
Tree 06	Douglas fir	50	8	4.5	Good	Good	n/a	Off-site tree (no tag)	RETAIN
Tree 07	Douglas fir	45	7	4	Good	Good	n/a	Off-site tree (no tag)	RETAIN
531	Plane tree	100+	10	8	Good	Fair	Yes		Remove
532	Plane tree	120+	11	9	Good	Fair	Yes		Remove
533	Douglas fir	30	5	4	Fair	Fair	No		Remove
534	Bigleaf maple	40	7	6	Fair	Fair	No	Tree leaning East	Remove
535	Bigleaf maple	28,26,12	6	4	Fair	Fair	No		Remove
536	Douglas fir	38	7	4	Fair	Fair	No		Remove
537	Douglas fir	40	7	5	Fair	Good	No		Remove
538	Ornamental plum	70	13	5	Fair	Fair	No		Remove
539	Ornamental plum	60	11	5	Fair	Fair	No		Remove
540	Chestnut	40,30	8	6	Fair	Fair	No		RETAIN
541	Douglas fir	60	11	6	Fair	Fair	Yes		RETAIN
542	Bigleaf maple	30	5	4	Good	Fair	No	Tree leaning North	RETAIN
543	Douglas fir	48	9	4	Fair	Fair	No		RETAIN
544	Red cedar	30	5	4	Good	Good	No		RETAIN
545	Red cedar	58	10	6	Good	Good	No		RETAIN
546	Douglas fir	50	9	7	Fair	Good	No		RETAIN
547	Chestnut	32	6	5	Good	Good	No		Remove
548	Douglas fir	46	8	6	Fair	Fair	No	Tree leaning North	Remove
549	Douglas fir	72	13	6	Fair	Good	Yes		Remove
550	Douglas fir	34	6	5	Fair	Fair	No		Remove
551	Douglas fir	34	6	4	Fair	Fair	No		Remove
552	Bigleaf maple	38	7	4	Poor	Poor	No		Remove
553	Scots pine	24	4	4	Fair	Fair	No		RETAIN
554	Scots pine	32	6	4	Fair	Fair	No	Tree leaning North-west	RETAIN
555	Douglas fir	38	6	3	Poor	Poor	No		Remove
556	Douglas fir	30	5	3	Poor	Poor	No		Remove
557	Douglas fir	30	5	3	Fair	Fair	No		Remove
558	Douglas fir	30	5	2	Poor	Poor	No		Remove
559	Douglas fir	42	8	4	Fair	Fair	No		Remove
560	Douglas fir	30	5	3	Fair	Fair	No		Remove
561	Red cedar	30,30,16	7	5	Good	Fair	No		RETAIN
562	Bigleaf maple	38	7	5	Good	Fair	No		RETAIN
563	Bigleaf maple	58	10	6	Fair	n/a	n/a	Off-site tree	RETAIN
564	Bigleaf maple	32	6	5	Good	Good	n/a	Off-site tree	RETAIN
565	Bigleaf maple	28,25	7	6	Good	Good	n/a	Off-site tree	RETAIN
566	Bigleaf maple	62	11	7	Good	Fair	n/a	Off-site tree	RETAIN
567	Douglas fir	34	5	4	Fair	Fair	No		Remove
568	Douglas fir	30	5	4	Fair	Fair	No		Remove
569	Golden cedar	38	7	5	Fair	Fair	No		Remove
570	Red cedar	46	8	5	Fair	Fair	No		RETAIN
637	Big-leaf maple	5, 10, 15, 15	6	5	Fair	Fair	No		Remove
638	Golden cedar	15	3	3	Good	Good	No		Remove
639	Laburnum	15, 15, 4	4	3	Good	Good	No		Remove
640	Laburnum	10, 10, 10	4	3	Good	Good	No		Remove
641a	Fruiting plum	40	7	5	Poor	Poor	No		Remove
641b	Fruiting plum	20, 30	6	5.5	Poor	Poor	No	Boundary tree (no tag)	Remove
641c	English hawthorn	20	4	4	Fair	Fair	No	Boundary tree (no tag)	Remove
641d	English hawthorn	20, 25	7	5	Fair	Fair	No	Boundary tree (no tag)	Remove
642a	Pear	25	5	5N	Fair	Poor	No		Remove
642b	Crab apple	40	6	5	Fair	Poor-Fair	n/a	Off-site tree (no tag)	RETAIN
642c	English hawthorn	35	6	5S	Poor-Fair	Fair	n/a	Off-site tree (no tag)	RETAIN
642d	Row of 10+ plum &	30-40 range	various	6	Fair-Good	Fair	No	(No tag)	Remove
643a	Apple	40	7	7NW	Fair	Poor	No		Remove
643b	Big-leaf maple	30, 28, 25	11	5	Fair	Fair	Yes	(No tag)	Remove
644	Grove of 10+ fruiting	10x20	various	6	Fair	Poor-Fair	No		Remove
645	Laburnum	5, 10, 10	3	3	Good	Good	No		Remove
646	Laburnum	15, 20, 20	6	3	Fair	Fair	No		Remove
647	Douglas fir	40	7	3N	Poor	Poor	No		Remove
648	English hawthorn	25, 25, 30	11	5N	Poor	Poor	No		Remove
649	Weeping willow	10, 15, 15, 20, 25	11	5	Good	Fair	No		Remove
650	Apple	20	4	2	Poor	Fair	No		Remove
651	Pear	10, 15, 20, 25	9	4	Poor	Poor	No		Remove
652a	Pear	20, 20, 30	10	4	Fair	Poor-Fair	No		Remove
652b	Apple	35	6	4	Fair	Fair	No	(No tag)	Remove
652c	Fruiting plum	10, 10	3	4	Good	Good	No	(No tag)	Remove
653a	Apple	7	2	2	Poor	Poor	No		Remove
653b	Fruiting plum	10, 10	3	2	Good	Fair	No	(No tag)	Remove
654	Apple	5	1	2	Fair	Poor	No		Remove
655	Apple	35	6	6SE	Fair	Poor	No		Remove
656	Fruiting plum	30	5	6W	Poor-Fair	Poor	No		Remove
657	Fruiting plum	25	5	5N	Fair	Fair	No		Remove
658	Fruiting plum	25	5	5E	Fair	Poor	No		Remove
659	Apple	30	5	3	Poor	Poor	No		Remove
660	Apple	40	7	3	Poor	Poor	No		Remove
661	Pear	45	8	2	Poor-Fair	Poor	No		Remove
662a	Laburnum	12x5	11	3	Fair	Poor	No		Remove
662b	Big-leaf maple	30	5	4N	Fair	Poor	No	(No tag)	Remove
662c	Big-leaf maple	25, 25, 20, 10	12	4	Poor	Poor	Yes	(No tag)	Remove
663	Laburnum	10, 15	4	3E	Good	Fair	No		Remove
664	Laburnum	30	5	3S	Fair	Fair	No		Remove
665	English hawthorn	15, 30	7	3	Fair	Fair	No		Remove
666	Laburnum	30, 15	7	5SE	Poor-Fair	Poor	No		Remove
667	Laburnum	20	4	6E	Good	Poor-Fair	No		Remove
668	Fruiting cherry	25	5	4S	Poor	Poor-Fair	No		Remove
669	English hawthorn	10x10	7	5	Poor-Fair	Poor-Fair	No		Remove
670	Camellia (tree form)	6x8	5	3	Good	Good	No		Remove
671	Fruiting plum	20	4	2	Good	Fair	No		Remove
672	Fruiting plum	15	3	2	Fair	Fair	No		Remove
673	Fruiting plum	10	2	2S	Fair	Fair	No		Remove
674	Fruiting plum	15	3	2	Good	Good	No		Remove
675	Fruiting plum	30	5	4S	Fair	Fair	No		Remove
676	English hawthorn	5, 10, 10	3	5S	Poor	Poor	No		Remove
677	Fruiting plum	20, 10	5	5E	Poor	Poor	No		Remove
678	Fruiting plum	20	4	5S	Fair	Fair	No		Remove
679	Fruiting plum	15, 20, 30	9	5	Fair	Poor	No		Remove
680	Apple	30, 30	9	4	Fair	Fair	No		Remove
681a	Fruiting plum	25	5	6S	Fair	Poor	No		Remove
681b	Fruiting plum	15	3	6S	Fair	Poor	No	(No tag)	Remove
682	Fruiting plum	30	5	6S	Fair	Poor	No		Remove
683	Fruiting plum	15, 15	4	5W	Fair	Poor	No		Remove
684	Apple	25, 25	7	4N	Fair	Poor	No		Remove
685	Pear	25	5	3	Fair	Fair	No		Remove
686	Apple	25	5	3	Poor	Poor	No		Remove
687a	Fruiting plum	40	7	6N	Fair	Poor	No		Remove
687b	Fruiting plum	35	6	5W	Fair	Poor	n/a	Off-site tree (no tag)	RETAIN
687c	Fruiting plum	35	6	4	Fair	Fair	No	(No tag)	Remove
687d	Fruiting plum	25	5	3	Fair	Fair	No	(No tag)	Remove
688	English hawthorn	5, 10, 10, 15	15	3	Poor	Poor	No		Remove
689	Fruiting plum	30	5	7S	Fair	Poor	No		Remove
690	Big-leaf maple	20	4	3N	Fair	Fair	No		Remove
691	English hawthorn	20	4	3	Poor	Poor	No		Remove
LEGEND: Rows in grey highlight RETAINED trees; Cells in yellow highlight ON-SITE bylaw-protected trees.									

TREE PRESERVATION MEASURES

1. Start-up meeting:

Before demolition, or other site work commences, the Site Superintendent shall meet with the arborist to review the Tree Protection Plan, Arborist Report and associated measures. The Site Superintendent is responsible for ensuring that all relevant sub-contractors and trades are familiarized with the tree protection measures and permit conditions in effect on the site.

2. Plan posting:

A full-size all-weather copy of the Tree Plan shall be posted in the site office in plain site.

3. Tree removal, grubbing & mulching:

Construction/Tree fencing shall be erected after tree removal and grubbing within the TPAs is completed but prior to other site work commencing. The on-site portion of the TPAs shall be grubbed under supervision of the arborist and top-dressed with 10cm of disease-free tree chip mulch. The tree planting areas indicated on the Landscape planting plan around the site perimeter shall be fenced to protect growing soils, as indicated on the tree plan.

4. Tree protection fencing:

Tree fencing and signage shall be inspected by the project arborist, approved by the City of Victoria and remain in good condition throughout the duration of the project.

5. Prohibition of disturbance:

All forms of disturbance to the protected trees or their habitat within the fenced protection areas (TPAs) is prohibited.

6. Temporary access to TPAs:

Temporary construction access to a Tree Protection Area (TPA) must be approved and supervised by the project arborist. This includes landscaping.

7. Soil armouring:

If it should prove necessary to reduce the tree fencing, the exposed TPA outside the fencing shall be armoured with 3/4" plywood or a temporary road allowance and 200mm of road-base, moderately compacted with a plate compactor.

8. Prohibition of material storage within TPAs:

No equipment, materials, waste products or excavated soil shall be placed or stored within the TPA. THIS PARTICULARLY INCLUDES HOARDING OF EXCAVATED SOILS NEEDED FOR BACKFILLING OF THE FOUNDATION.

9. Arborist supervision of site works:

The arborist shall be present to oversee stump removal, excavation, sub-grading, lane or pathway base preparation, service trenching, blasting or any other form of disturbance within, or adjacent to, the tree protection areas (TPAs). Any tree roots or branches damaged shall be pruned back to undamaged tissue by the arborist. (Grading of greenway has been designed to minimize tree impacts as much as possible within existing constraints.)

10. Covering excavated cuts:

Any excavated cut within or adjacent to a TPA shall be securely covered with heavy-gauge plastic to prevent soil desiccation and erosion.

11. Site monitoring:

The Project Arborist shall monitor the site on a regular basis during the site preparation, construction and landscaping phases to ensure ongoing and effective compliance with the tree protection measures specified in this tree plan and in on-site meetings with the General Contractor and relevant consultants and sub-contractors.

12. Pre-blasting meeting:

The site superintendent and blasting sub-contractor shall meet with the arborist to review the blasting plan prior to drilling. Modified blasting practices or rock removal techniques shall be utilized where considered necessary by the arborist to minimize blasting impacts to protected trees.

13. Procedure for blasting near tree root zones:

a) When blasting is required immediately adjacent to a Tree Protection Area, the blasting contractor shall work with the arborist to develop a blasting plan and deploy best practices that minimize impacts to protected trees.
b) Blasting vibrations in the vicinity of the Tree Protection Areas are not to exceed a peak particle velocity of 25 mm/sec.
c) Use DYNAMITE as the explosive product. No fertilizer-based explosive is permitted, due to its toxicity to tree roots.
d) The contractor shall prevent rock debris from the blast site from entering the TPA.

14. Irrigation of TPAs:

Mulched TPAs shall be irrigated once every two weeks during the dry summer period (May 1 - Sept 31) to a minimum effective depth of 30cm. The General Contractor shall ensure that a temporary water service for irrigation purposes is employed on site.

15. Pre-landscaping meeting:

The General Contractor, Landscape Contractor and Landscape Architect shall meet with the arborist to review the landscaping workplan prior to landscape construction or site preparation commencing. Potential impacts to sensitive tree habitat will be identified and measures provided to eliminate or mitigate the impacts.

16. Replacement tree requirements:

10 replacement trees shall be planted on the subject property and adjacent road allowance as shown on the Landscape plan. See Landscape Plan for proposed species and planting locations. All replacement trees shall meet or exceed the minimum size requirements set forth in Section 17(g)(ii) of the City's tree bylaw (1.5m in height or 4cm caliper diameter). If there are an insufficient number of plantable spaces available to accommodate all replacement trees, the applicant may discuss a cash-in-lieu payment to the City for trees surplus to requirements.

17. Post-construction inspection and sign-off:

A post-construction inspection and assessment of the site and protected trees shall be conducted by the Project Arborist in the company of the General Contractor. Any deficiencies will be identified. Once all deficiencies have been addressed to the satisfaction of the Project Arborist and the City of Victoria, a post-construction letter of completion will be prepared by the arborist and submitted to the City.

PROJECT
3080, 3082 & 3090 Washington
Avenue, Victoria, BC

SHEET TITLE
Tree Management Plan
for Development Permit

	REVISED DP	Nov 15, 2020
7	REVISED DP	Oct 29, 2020
6	FOR SUBDIVISION APP.	Aug 6, 2020
5	FOR SUBDIVISION APP.	Jul 24, 2020
4	FOR SUBDIVISION APP.	Mar 10, 2020
3	FOR SUBDIVISION APP.	Feb 12, 2020
2	FOR SUBDIVISION APP.	Oct 23, 2019
1	FOR SUBDIVISION APP.	Oct 13, 2019

PROJECT NO.	18-030
DATE	September 16, 2019
SHEET NO.	1:225
DRAWN BY	JG

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